

IN THE CLAIMS:

1. (Currently Amended) A semiconductor light emitting device comprising:

a substrate;

a semiconductor multilayer structure formed on one of a plurality of main surfaces of the substrate, the semiconductor multilayer structure including a light emitting layer;

5 a first electrode and a second electrode formed on the semiconductor multilayer structure, power being supplied to the semiconductor multilayer structure through the first electrode and the second electrode causing the light emitting layer to emit light; and

a phosphor film covering at least [[a]] an entire main surface of the semiconductor multilayer structure which faces away from the substrate, wherein

10 the semiconductor multilayer structure is divided into a plurality of portions by a division groove, and each of the plurality of portions is an independent light emitting element,

each of a plurality of light emitting elements have a diode structure, and includes an anode electrode and a cathode electrode, and an insulating film is formed on a side surface of each of the plurality of light emitting elements,

15 the plurality of light emitting elements are connected in series such that a cathode electrode of a light emitting element is connected to an anode electrode of a different light emitting element using a wire formed by a thin metal film formed on the insulating film, and

one of an anode electrode of one of the plurality of light emitting elements at a higher potential end of an array of the plurality of light emitting elements is the first electrode,

20 and one of a cathode electrode of one of the plurality of light emitting elements at a lower potential end of the array of the plurality of light emitting elements is the second electrode.

2. (Previously Presented) The semiconductor light emitting device of Claim 1, wherein

the semiconductor multilayer structure includes a light reflective layer between the light emitting layer and the one of the plurality of main surface of the substrate.

3. (Previously Presented) The semiconductor light emitting device of Claim 1, wherein

the division groove is deep enough to reach the substrate.

4. (Previously Presented) The semiconductor light emitting device of Claim 1 further comprising:

a first terminal and a second terminal formed on another one of the plurality of main surfaces of the substrate;

5 a first conductive member electrically connecting the first electrode to the first terminal; and

a second conductive member electrically connecting the second electrode to the second terminal.

5. (Previously Presented) The semiconductor light emitting device of Claim 4, wherein

at least a part of each of the first conductive member and the second conductive member is a plated-through hole provided in the substrate.

6. (Previously Presented) The semiconductor light emitting device of Claim 5, wherein

each of the plated-through holes is located at a different corner of the substrate.

7. (Previously Presented) The semiconductor light emitting device of Claim 6, wherein

the plurality of light emitting elements are formed on locations aside from locations of the plated-through holes.

8-13. (Cancelled)

14. (Previously Presented) The semiconductor light emitting device of Claim 4, wherein

at least part of each of the first conductive member and the second conductive member is a conductive film formed on a side surface of the substrate.

15. (Previously Presented) The semiconductor light emitting device of Claim 1, wherein

the substrate is highly resistant.

16. (Previously Presented) The semiconductor light emitting device of Claim 1, wherein

the semiconductor multilayer structure has a structure of epitaxial growth on the substrate.

17. (Previously Presented) The semiconductor light emitting device of Claim 1, wherein

the semiconductor multilayer structure is a semiconductor multilayer structure that has been epitaxially grown on a single-crystal substrate different from the substrate and
5 transferred to the substrate.

18. (Previously Presented) The semiconductor light emitting device of Claim 1 wherein the anode electrode for each of the plurality of light emitting elements includes a transparent electrode.

19. (Previously Presented) The semiconductor light emitting device of Claim 2 wherein the light reflective layer is a distributed Bragg reflector layer.

20. (Previously Presented) A lighting module comprising:
a mounting substrate; and
a semiconductor light emitting device defined in Claim 1 mounted on the mounting substrate.

21 (Previously Presented) The lighting module of Claim 20, wherein
The mounting substrate has a depression which includes a reflective film on a wall thereof, and

The semiconductor light emitting device is mounted on a bottom of the
5 depression.

22.-23. (Cancelled)

24. (Previously Presented) A manufacturing method for a semiconductor light emitting device, comprising the steps of:

forming a semiconductor multilayer structure including a light emitting layer on one of a plurality of main surfaces of a substrate;

5 dividing the semiconductor multilayer structure into a plurality of portions each of which corresponds to a semiconductor light emitting device;

 forming a phosphor film on and around each of the plurality of portions of the semiconductor multilayer structure;

 dividing the substrate for each of the plurality of portions of the semiconductor
10 multilayer structure; and

 connecting the plurality of portions of the semiconductor multilayer structure in series using a thin metal wire.

25. (Previously Presented) The method of Claim 24 further comprising the step of:
 varying a percentage of phosphor in the phosphor film to vary a color temperature of a white light emitted by the semiconductor light emitting device.

26. (Previously Presented) The method of Claim 24 further comprising the step of:
 varying a thickness of the phosphor film to vary a color temperature of a white light emitted by the semiconductor light emitting device.

27. (Previously Presented) An array of a plurality of light emitting elements formed on a substrate, wherein

 the light emitting elements are covered with a phosphor layer,

 a first light emitting element included in the light emitting elements is formed by
5 laminating a first conductive layer to which a first electrode is connected, a light emitting layer,

and a second conductive layer to which a second electrode is connected, on the substrate in this order,

10 a second light emitting element included in the light emitting elements is formed by laminating a first conductive layer to which a first electrode is connected, a light emitting layer, and a second conductive layer to which a second electrode is connected, on the substrate in this order, the second light emitting element being adjacent to the first light emitting element,

the first electrode included in the first light emitting element is electrically connected to the second electrode included in the second light emitting element by a metal film, and

15 the first and the second light emitting elements are separated from each other by a groove.

28. (Previously Presented) The array of Claim 27 further comprising an insulating film formed on a side surface of the first light emitting element and a side surface of the second light emitting element, wherein the entire metal film is formed above the insulating film.

29. (Previously Presented) The array of Claim 27 wherein
the first light emitting element includes a first light reflective layer located between the light emitting layer of the first light emitting element and the substrate, and
the second light emitting element includes a second light reflective layer located
5 between the light emitting layer of the second light emitting element and the substrate.

30. (Previously Presented) The array of Claim 29 wherein
the first light reflective layer is a first distributed Bragg reflector layer, and
the second light reflective layer is a second distributed Bragg reflector layer.

31. (Previously Presented) The array of Claim 27 wherein the groove is deep enough to reach the substrate.

32. (Previously Presented) The array of Claim 27 further comprising

a first terminal formed on the substrate;

a second terminal formed on the substrate;

a first conductive member electrically connecting the first electrode in the first

5 light emitting element to the first terminal; and

a second conductive member electrically connecting the second electrode in the second light emitting element to the second terminal.

33. (Previously Presented) The array of Claim 32 wherein at least part of each of the first conductive member and the second conductive member is a plated-through hole provided in the substrate.

34. (Previously Presented) The array of Claim 33 wherein each of the plated-through
5 holes is located at a different corner of the substrate.

35. (Previously Presented) The array of Claim 34 wherein the first light emitting element and the second light emitting element are formed on locations aside from the locations of the plated-through holes.

36. (Previously Presented) The array of Claim 32 wherein at least part of each of the
10 first conductive member and the second conductive member is a conductive film formed on a side surface of the substrate.

37. (Previously Presented) The array of Claim 27 wherein the substrate is highly resistant.

38. (Previously Presented) The array of Claim 27 wherein
the first light emitting element includes a first semiconductor multilayer structure having a structure of epitaxial growth on the substrate, and
the second light emitting element has second semiconductor multilayer having a
5 structure of epitaxial growth on the substrate.

39. (Previously Presented) The array of Claim 27 wherein
the first light emitting element includes a first semiconductor multilayer structure on the substrate, the first semiconductor multilayer structure being epitaxially grown on a single-crystal substrate different from the substrate and transferred to the substrate, and
5 the second light emitting element includes a second semiconductor multilayer structure on the substrate, the second semiconductor multilayer structure being epitaxially grown on a single-crystal substrate different from the substrate and transferred to the substrate.

40. (Previously Presented) The array of Claim 27 wherein
the second electrode in the first light emitting element includes a first transparent electrode, and
the second electrode in the second light emitting element includes a second
5 transparent electrode.

41. (New) A semiconductor light emitting device comprising:

a substrate;

10 a plurality of light emitting elements connected in series formed on the substrate and separated by division grooves, the plurality of light elements including only one external cathode electrode and only one external anode electrode, each of the plurality of light emitting elements including

a first electrode located above the substrate,

15 a light reflecting layer located above the substrate,

a light emitting layer located above the light reflecting layer, and

a second electrode located above the light emitting layer,

wherein, a first electrode of a first light emitting element at a lower potential end of the plurality of lighting elements is the one external cathode electrode, and a second
20 electrode of a second light emitting element at a higher potential end of the plurality of lighting elements is the one external anode electrode; and

a phosphorus layer covering all of the substrate and the plurality of light emitting elements.